**Before the**
**Federal Communications Commission**
**Washington, DC 20554**

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| In the Matter of | ) | |
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| Amendment of Part 90 of the Commission's Rules | ) | WP Docket No. 07-100 |
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To: The Commission

## COMMENTS OF THE WIRELESS INTERNET SERVICE PROVIDERS ASSOCIATION

The Wireless Internet Service Providers Association ("WISPA"), pursuant to Sections 1.415 and 1.419 of the Commission's Rules, hereby submits these comments in response to the Sixth Further Notice of Proposed Rulemaking in the above-captioned proceeding.[1]

WISPA strongly urges amendment of the Commission's eligibility rules to enable and promote efficient sharing of the 4.9 GHz band by public safety users on a primary basis and by commercial users on a secondary basis. As discussed herein, this two-tiered sharing approach will facilitate increased use of the 4.9 GHz band and encourage a more robust market for equipment and greater innovation, while protecting primary public safety users from interference. Of the alternatives discussed in the *FNPRM*, two-tiered sharing will best "promote more opportunistic use of the 4.9 GHz band without compromising the integrity and security of public safety operations," as well as deliver important public interest benefits such as promoting rural broadband deployment to help bridge the digital divide.

### Introduction

WISPA is the trade association that represents the interests of wireless Internet service providers ("WISPs") that provide high-speed fixed wireless broadband services to consumers,

[1] *Amendment of Part 90 of the Commission's Rules*, Sixth Further Notice of Proposed Rulemaking, WP Docket No. 07-100, FCC 18-33 (rel. March 23, 2018) ("*FNPRM*").

businesses and anchor institutions across the country. WISPA's members include more than 800 WISPs, equipment manufacturers, distributors and other entities committed to providing affordable and competitive fixed broadband services. WISPA estimates that WISPs serve more than 4,000,000 people, many of whom reside in rural, unserved and underserved areas where wired technologies may not be available or are not cost-effective to deploy.

To meet subscriber needs, WISPs rely on a number of licensed, lightly licensed and unlicensed bands, including the 900 MHz, 2.4 GHz, 2.5 GHz, 3.65 GHz and 5 GHz bands. In recent times, the 5 GHz U-NII bands have become the workhorses for WISPs for both point-to-point and point-to-multipoint network components, although those bands are becoming more congested as consumers demand more capacity. Given its proximity to the 5 GHz bands, the 4.9 GHz band offers known propagation qualities and equipment that can be readily modified to operate in the 4940-4990 MHz band. Moreover, WISPs are adept at sharing spectrum, and are at the forefront of promoting innovative means by which spectrum can be efficiently shared.

In 2002, the Commission allocated the 4.9 GHz band to public safety, but restricted eligibility to public safety entities[2] – non-public safety entities may use this band only if they enter into a "sharing arrangement" with an eligible public safety licensee for "operations in support of public safety."[3] Over 15 years later, this 50 megahertz block of contiguous spectrum remains seriously underutilized, with no more than 3.5% of potential public safety licensees using the band.[4] As the Commission stated, the 4.9 GHz band has "fallen short of its potential."[5]

In 2012, the Commission adopted a *Fifth Further Notice of Proposed Rulemaking* requesting comment on how to promote efficient and increased use of the 4.9 GHz band,

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[2] *4.9 GHz Band Transferred from Federal Government Use*, Second Report and Order and Further Notice of Proposed Rulemaking, WT Docket No. 00-32, 17 FCC Rcd 3955 (2002).
[3] 47 C.F.R. § 90.1203.
[4] *See FNPRM* at ¶ 1.
[5] *Id*.

including whether to expand eligibility for use of the band to non-public safety users.[6] WISPA filed both comments and reply comments in response to the *Fifth FNPRM* urging the Commission to allow commercial use on a shared, secondary basis with public safety and subject to preemption by public safety in emergency situations.[7] WISPA suggested that an automated geolocation database could be used to manage spectrum access and potential interference.[8]

WISPA also noted that the proximity of this band to the 5 GHz band would incentivize the development of an equipment ecosystem for the 4.9 GHz band and thereby lower costs for all users of the band, including public safety.[9] WISPA therefore urged the Commission to conform its technical rules for the 4.9 GHz band as much as possible to those for the 5 GHz U-NII bands, such as channel widths of 15-20 megahertz and the same power limits that apply to 5 GHz U-NII operations.[10] WISPA also suggested that no more than 5 megahertz of spectrum should be designated for mobile use by public safety.[11] Several commenters agreed with WISPA's recommendations, although disagreement was expressed by some public safety commenters.

## Discussion

### I. THE COMMISSION SHOULD ALLOW SECONDARY COMMERCIAL USE OF THE 4.9 GHz BAND ON A SHARED BASIS WITH PUBLIC SAFETY LICENSEES

In the *FNPRM*, the Commission describes the significant underutilization of the 4.9 GHz band and requests comment on alternative eligibility and spectrum sharing approaches, as well as

[6] *Amendment of Part 90 of the Commission's Rules Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band Service Rules for the 698-746, 747-762 and 777- 792 MHz Bands*, Fourth Report and Order and Fifth Further Notice of Proposed Rulemaking, WP Docket No. 07-100 PS Docket No. 06-229 WT Docket No. 06-150, 27 FCC Rcd 6577, 6592- 94 (2012) ("*Fifth FNPRM*").
[7] *See* WISPA Comments in WP Docket No. 07-100 (filed Nov. 1, 2012) ("WISPA 2012 Comments"); WISPA Reply Comments in WP Docket No. 07-100 (filed Nov. 29, 2012)("WISPA 2012 Reply Comments").
[8] *See* WISPA 2012 Comments at 6-8; WISPA 2012 Reply Comments at 3-6.
[9] *See* WISPA 2012 Comments at 5.
[10] *See id.* at 9.
[11] *See id.* at 10.

other alternatives for the band. In particular, the Commission requests comment on four specific alternatives:[12]

- Extending eligibility to critical infrastructure industry ("CII") entities on a co-primary basis;
- Allowing public safety licensees to lease spectrum capacity to non-public safety users;
- Two-tiered sharing by commercial users on a secondary basis; and
- Redesignating the band for commercial wireless use.

Of these alternatives, WISPA continues to strongly endorse expanding eligibility to enable commercial users to share the 4.9 GHz band with public safety on a two-tiered basis. Under this approach, commercial use of the 4.9 GHz band would be on a secondary basis to primary public safety licensees and would be subject to registration in a spectrum management database in order to protect primary public safety users from harmful interference. As discussed below, this approach will "promote more opportunistic use of the 4.9 GHz band without compromising the integrity and security of public safety operations"[13] and best achieve the Commission's stated goal for this band.

### A. Two-Tiered Sharing Will Best Achieve The Commission's Stated Goal For The 4.9 GHz Band

In requesting comment on alternatives to stimulate expanded use of and investment in the 4.9 GHz band, the Commission's stated goals are "to ensure that public safety continues to have priority in the band while opening up the band to additional uses that will facilitate increased usage" and "encourage a more robust market for equipment and innovation, while protecting primary users from harmful interference."[14] As WISPA has previously demonstrated in this

[12] *See FNPRM* at ¶¶ 66 – 86.
[13] *Id*. at ¶ 3.
[14] *Id*.

proceeding,[15] this goal can best be achieved by adopting the two-tiered sharing approach described in the *FNPRM*, in which Tier 1 would consist of primary licensees in the band and Tier 2 would allow commercial users "to access the band on a secondary basis, with safeguards to ensure priority and interference protection for Tier 1 operations."[16]

First and foremost, the two-tiered sharing approach will best preserve the primary public safety purpose of the 4.9 GHz band. In particular, an automated spectrum management database system would enable dynamic secondary use of the 4.9 GHz band while ensuring that primary public safety users maintain priority access and are able to operate across the band without interference from secondary users. This automated database would work in concert with software in the equipment to provide location and technical data to protect primary public safety users while allowing secondary use based on distance from defined areas of public safety operations and/or frequency diversity. Moreover, this database would accommodate temporary, incident-based public safety use in circumstances where an incident requires additional spectrum capacity for public safety operations or requires a public safety user to temporarily operate outside of the defined geographic area of its license. Thus, the two-tiered sharing approach would maximize both continued priority access to the full 4.9 GHz band for public safety and public safety's ability to use the band in support of its mission-critical operations.

Concerns raised in the past as to whether such a database would provide sufficient real-time protection for Tier 1 operations are no longer valid in light of the significant advances that have occurred over the past six years in dynamic spectrum sharing techniques and technologies, as demonstrated by the various competitive spectrum access systems ("SAS") that are currently undergoing Commission certification for management of the Citizens Broadband Radio Service

[15] *See* WISPA 2012 Comments at 4-9; WISPA 2012 Reply Comments at 2-6.
[16] *FNPRM* at ¶ 82.

("CBRS") band. Applying a similar approach here, entities requesting spectrum access would provide a database with the location and technical information necessary for it to calculate interference and determine when and where secondary uses would be permitted at a given time. The database also would have the ability – indeed, the responsibility – to displace secondary users to the extent public safety needed to be prioritized on additional frequencies. This approach would impose a minimal cost on Tier 2 users in relation to the benefits of being able to access the 4.9 GHz band on a secondary basis.[17]

In addition to preserving the public safety purpose of the 4.9 GHz band, the proposed two-tiered sharing approach would achieve the Commission's goal of promoting increased use of the band.[18] Enabling secondary use of the 4.9 GHz band would provide commercial and other non-public safety users access to much-needed spectrum for the deployment and expansion of networks and services for a broad range of potential use cases and applications. One of the primary challenges that WISPs face is access to sufficient spectrum. Existing spectrum bands are becoming increasingly constrained at the same time consumer demand is rising. WISPs across the country are thus actively exploring additional spectrum options, particularly in bands that are in close spectral proximity to ones in which they already operate. WISPs are already heavy users of the 5 GHz band for both point-to-multipoint broadband services and point-to-point connectivity, thus making the spectrally proximate 4.9 GHz band an attractive option.

Adopting a two-tiered sharing approach would also achieve the Commission's goal of encouraging a more robust market for equipment and innovation[19] by spurring the development of an equipment ecosystem that would facilitate the introduction of new, lower-cost equipment

[17] *See id*. at ¶ 83.
[18] *Id*. at ¶ 3.
[19] *Id*.

and encourage innovation among competing equipment vendors and service providers, to the benefit of all users of the band, particularly public safety, and to the public they serve.

### B. Two-Tiered Sharing Will Advance Other Policy Priorities

Adopting the proposed two-tiered sharing approach also would advance other significant policy priorities, particularly the promotion of rural broadband deployment and the bridging of the digital divide.

As WISPA has documented in other Commission proceedings, recent Commission reports confirm the lack of fixed broadband availability and consumer choice in rural areas.[20] According to the Commission's *2018 Broadband Deployment Report*, 16 percent of rural Americans lack access to fixed broadband service at 10/1 Mbps (the lowest speed tier evaluated by the Commission), and just over 30 percent of rural Americans lack access to 25/3 Mbps service, which is the Commission's benchmark for assessing whether a fixed service provides "advanced telecommunications capability."[21] It cannot be disputed that there is a persistent digital divide in this country, that rural Americans are on the wrong side of that divide and that disconnection from the digital economy can have profound economic and social effects. Access to spectrum for fixed broadband service is an essential tool for bridging that gap.

In many areas of our country, consumers can obtain access to fixed broadband service only through a WISP. At a fraction of the cost to deploy fiber and other wired technologies, fixed wireless technology is the most cost-effective last-mile solution in many unserved areas, and access to the 4.9 GHz band on a secondary basis would offer a new opportunity for WISPs to invest in network deployments and upgrades that can expand the availability and sustainability of affordable broadband access to consumers in areas that are currently underserved. Adopting

[20] *See, e.g.*, WISPA Comments, GN Docket No. 17-258 (filed Dec. 28, 2017), at 10-12.
[21] *2018 Broadband Deployment Report*, 33 FCC Rcd 1660, 1686 (2018); *Id.* at 1667-68, ¶ 21.

the two-tiered sharing approach is therefore in the public interest, as it would promote rural broadband deployment while protecting public safety operations and achieving the Commission's goals for the 4.9 GHz band.

## II. OTHER ALTERNATIVES WILL NOT INCREASE USE OF THE BAND IN A MEANINGFUL WAY

As noted above, the *FNPRM* requests comment on other alternatives for increasing use of the 4.9 GHz band, including extending eligibility to CII on a co-primary basis; allowing public safety licensees to lease spectrum capacity to non-public safety users; and redesignating the band for commercial wireless use.[22] For various reasons, these alternatives will not achieve the Commission's stated goals for the 4.9 GHz band in a meaningful way.

Extending eligibility to CII on a co-primary basis with public safety would only marginally increase the pool of potential users of the 4.9 GHz band. Although this may create incentives for increased investment in the band by CII,[23] the CII market alone – even when combined with the public safety market – would not be sufficient to create the economies of scale and equipment ecosystem necessary to spur innovation and the introduction of lower-cost equipment. Further, limiting expanded eligibility to CII would effectively result in an allocation of spectrum to a specific industry, which runs directly counter to the Commission's general policy favoring flexible use of spectrum.[24] However, if the Commission were to further extend co-primary eligibility to all private internal systems rather than to a specific industry (as requested by EWA),[25] this would be a serious deviation from the Commission's core goal of supporting critical public safety needs, since co-primary licensing for all private internal systems raises the very real risk of diminishing the availability of 4.9 GHz spectrum for public safety

[22] *FNPRM* at ¶¶ 66 – 86.
[23] *Id*. at ¶ 70.
[24] *Id*. at ¶ 73.
[25] *Id*.

purposes. By contrast, the two-tier sharing approach supported by WISPA would ensure primary public safety use of the band in all cases.

Similarly, allowing public safety licensees to lease spectrum capacity to non-public safety users will be unlikely to result in a meaningful increase in the use of the 4.9 GHz band. As an initial matter, a potential lessee can only lease spectrum that has been licensed, and – as the Commission observed in the *FNPRM* – no more than 3.5% of potential public safety licensees are presently using the band,[26] thus making the opportunities for leasing *de minimus* at best. And while it is true that allowing leasing by non-public safety users could present a new potential revenue stream for public safety,[27] this is unlikely to be sufficient incentive for any significant number of additional public safety entities to obtain their own 4.9 GHz licenses, as demonstrated by the strong resistance by much of the public safety community over the years to allowing the leasing of excess capacity on the 700 MHz public safety broadband network, despite the potential benefits of leasing revenue. Thus, allowing leasing to non-public safety users would not create sufficient opportunities to achieve the Commission's goal of facilitating increased usage of the band or encouraging a more robust market for equipment and innovation.

Finally, redesignating the 4.9 GHz band for commercial wireless purposes would effectively eliminate this band as a viable option for public safety and would seriously curtail its availability to other potential non-public safety users, both commercial and non-commercial.[28] Recent experience with other bands demonstrates that the most likely outcome of such redesignation would be the appropriation of the band by large mobile wireless carriers to the exclusion of all other potential users, particularly if the band were to be auctioned. Incumbent public safety systems and potential public safety users would ultimately be pushed out of the 4.9

[26] *FNPRM* at ¶ 1.
[27] *Id*. at ¶ 74.
[28] *Id*. at ¶ 85.

GHz band with no alternative spectrum available.[29] To the extent the Commission may consider redesignating the band for commercial wireless use on an unlicensed basis under Part 15 of the Commission's Rules,[30] WISPA believes that this would be better accomplished through the two-tiered sharing approach described above in these comments, which would provide all of the same benefits (increased use of the spectrum, a more robust market for equipment, and greater innovation) without compromising the integrity and security of public safety operations.

## Conclusion

WISPA recommends adoption of the Commission's proposal to expand eligibility for the 4.9 GHz band to commercial users on a secondary basis, subject to appropriate safeguards to protect and preserve primary public safety use of this band. This two-tiered sharing approach best serves the public interest, as it will facilitate increased use of the band, encourage a more robust market for equipment, and stimulate innovation without compromising the security and integrity of public safety operations.

Respectfully submitted,

**WIRELESS INTERNET SERVICE PROVIDERS ASSOCIATION**

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[29] *See id*. at ¶ 86.
[30] *Id*. at ¶ 85.